

A POSSIBLY UNIQUE BILATERAL GYNANDROMORPH
OF THE WHITE ADMIRAL BUTTERFLY,
LADOGA CAMILLA L.

By G. W. BECCALONI*

Ladoga camilla L. is one of the less variable of British butterflies, with only 15 aberrations described to date (Howarth, 1984). The principle form of this variation consists of a reduction in the amount of white scaling present on both the upper and under sides of the wings. Few other types of variation are known to occur. As far as it has been possible to determine, no gynandromorphic specimens have previously been described and a search made through the *camilla* specimens in the National Collection at the British Museum (Natural History) has failed to reveal a single example of this condition. The specimen illustrated (Fig. 1) is therefore possibly the first bilateral gynandromorph of *L. camilla* known.

This specimen was taken by myself, along with several typical examples of *camilla*, at a location near Dorking, Surrey on the 16th July 1986. It is at present in my collection. Although the wing patterning of both male and female *camilla* is very similar, both wing size and shape differ quite considerably between the sexes, with the female's wings being larger and more rounded than the smaller and more angular wings of the male.

These characteristics are clearly displayed in the specimen illustrated; its left half being male and its right half female. It is probable that due to the difficulty experienced in distinguishing male from female *camilla*, especially in the field, that gynandromorphic examples of this species have been overlooked in the past, thereby accounting for their apparent absence in collections and in the literature.

The specimen illustrated is not only interesting for its gynandromorphism however, but because it has an unusual venational defect in vein 2 of its female (right) forewing. This defect is responsible for the union of the two white spots situated between veins 1 and 3 of this forewing. The black-scaled segment of vein 2 which usually divides these spots is absent, thus allowing them to unite. All other veins appear to be normal.

In addition, the white band across the female hindwing is slightly larger than in the type form, as are several of the white markings present on the female forewing. I can only find one previously described aberration of *camilla* which exhibits an *increase* in white scaling, this being ab. *latealba* Verity. The condition described above is similar to this aberration. Verity (1950) states that

*35A Church Road, Hanwell. London W7 3BD.



Figure 1. *Lagoda camilla* L. Bilateral gynandromorph, with left side male, right side female. Surrey 16.vii.1986. (upperside top, underside bottom).

ab. *latealba* is common in France but I have been unable to locate any British examples.

It is possible that both the venational defect and the enlargement of the white markings, are direct consequences of the specimen being gynandromorphic because of the unlikelihood of these rare conditions occurring together independently in the same butterfly.

Acknowledgements

I am very grateful to Mr. D. J. Carter and Mr. A. Watson both of the British Museum (Natural History) for confirming that the specimen is a bilateral gynandromorph and for allowing me to view the numerous *camilla* specimens in the National Collection. My thanks also go to Mr. A. D. A. Russwurm and Mr. T. G. Howarth for their help in tracking down ab. *latealba* and for determining the venational defect. Finally, I would like to thank Mr. C. H. B. Smith for

taking the excellent photographs of the specimen and Mr. D. S. K. McNamara for typing this manuscript.

References

- Howarth, T. G., 1973. *South's British Butterflies*. Frederick Warne & Co. Ltd., London.
 Verity, R., 1950. *La Farfalle diurne d'Italia* 4. Firenze.

EUPITHECIA VULGATA HAWORTH (THE COMMON PUG)
 SUBSPECIES SCOTICA COCKAYNE (LEP.: GEOMETRIDAE)
 IN CUMBRIA — *E. vulgata* is represented in Britain by three sub-
 species: *E. vulgata vulgata* Haworth occurs commonly throughout
 England, and in Scotland the paler and more strongly marked
 subspecies *scotica* Cockayne predominates. The very localised sub-
 species *clarensis* Huggins is restricted to County Clare in Ireland.

It is uncertain which subspecies are present in northern England
 as, so far as I am aware, no quantitative studies have been made on
 the English/Scottish borders. The Rothamsted Insect Survey light
 trap at Embleton (Site No. 464, O. S. Grid Ref. NV 232 227) in
 Cumbria gives an opportunity to rectify this and the results for
 1987 are tabulated below.

| | Total | Percentage |
|---------------------|-------|------------|
| <i>E. vulgata</i> | 26 | |
| indeterminate | 6 | 23 |
| ssp. <i>vulgata</i> | 9 | 35 |
| ssp. <i>scotica</i> | 11 | 42 |

There do not appear to be intermediate forms between *scotica*
 and *vulgata* at this site. All individuals in good condition were easily
 attributable to one subspecies or the other. Further investigations
 are required to determine which subspecies are present in more of
 these border regions but the present results suggest that clining does
 not occur in *E. vulgata* and that both subspecies *scotica* and *vulgata*
 are found together in the same areas. Without allopatric separation,
 questions may be raised about the subspecific status of *scotica*.
 Further observations from Rothamsted Insect Survey traps will
 be published as they become available.

Thanks are extended to Mrs. Betty Dodd for operating the trap
 at Embleton. ADRIAN M. RILEY, Entomology and Nematology
 Department, Rothamsted Experimental Station, Harpenden, Herts.,
 AL5 2JQ.